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TRI-RIVER AREA
COLORADO STATE UNIVERSITY
EXTENSION

2020 Western Colorado Onion Variety Trial Summary

The 2020 Western Colorado Onion Variety Trial was a success. The growing season was sufficient to produce high quality onions and yields were excellent. Planting occurred on April 3rd. Emergence was evaluated on June 1st when onions were at the 3-4 leaf stage. On August 31st, fusarium and pink root were evaluated. Maturity was evaluated on September 14th and 23rd, onions were harvested September 24th and sorted on November 20th.

Analysis of Variance (ANOVA) was performed on all evaluation data to test for significant ($p < .05$) differences among varieties. A least significant difference (LSD) test was performed to allow for comparison of how averages differed. If, for a particular evaluation, the average is greater than the LSD then we can be 95% confident that the variety performed better for that characteristic. For example, the market yield (LSD 5.5) of Granero (37.5 t/a) was significantly higher than that of Hamilton (31.2 t/a). However, the market yield of Tucannon (36.6 t/a) was not significantly higher than Hamilton (31.2 t/a).

For the Harvest Report (Table 1), there were significant differences in harvest yield, market yield, market yield w/o prepack, colossal, jumbo, medium, prepack, culls, and defects. Table 2 reports averages for emergence, pink root severity, fusarium, and maturity. There were statistically significant ($p < .05$) differences for all of those evaluations. Fusarium was reported as percent of infected plants and maturity was reported as percent of tops down. However, due to fusarium and maturity being expressed as percentages it was more accurate to transform the numbers to conform better to statistical parameters. Table 3 allows for more accurate comparison of varieties in terms of fusarium resistance and maturity. Pink root ratings are reported numerically, where 1=1%; 2=2-10%; 3=11-25%; 4=26-50%; and 5=>50% of root area infected.

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American Takii, Bejo and Seminis for their generous contributions.

American Takii

Traverse

Grand Perfection

Ridgeline

Seminis

SV6672NW

Tucannon

Crusher

XP 07716000

Jawbridge

Bejo

Tamara

Legend

Dawson

Hamilton

Red Carpet



Table 1. Harvest Report - Western Colorado Onion Variety Trials
 Hines Farms - Delta, Colorado
 Yields, sizes, and defects are reported as average tons per acre.
 Planted April 3; Harvested September 24; Processed November 20.

	<u>Color</u>	<u>Harvest Yield*</u>	<u>Market Yield*</u>	<u>Market Yield w/o Prepack*</u>	<u>Colossal*</u>	<u>Jumbo*</u>	<u>Medium*Prepack*</u>	<u>Culls*</u>	<u>Defects*</u>	<u>Storage Loss</u>	
<i>Grower Standard</i>											
Vaquero	Y	43.3	42.6	41.0	4.1	36.2	0.7	1.7	0.0	0.6	0.0
Granero	Y	38.4	37.5	31.2	1.1	22.0	8.2	4.8	0.1	0.2	0.3
<i>American Takii</i>											
Traverse	Y	24.1	23.3	16.3	0.0	14.9	1.5	7.0	0.4	0.0	0.4
Grand Perfection	Y	32.1	31.2	27.6	4.8	19.7	3.0	3.7	0.3	0.0	0.5
Ridgeline	Y	20.2	17.9	13.0	0.0	11.6	1.4	3.7	0.6	0.9	0.2
<i>Seminis</i>											
SV6672NW	Y	44.5	44.3	41.9	17.5	23.8	0.7	2.3	0.3	0.0	0.0
Tucannon	Y	36.9	36.6	32.7	3.9	27.0	1.9	3.0	0.2	0.0	0.0
Crusher	Y	38.2	36.3	34.4	4.7	27.1	2.5	1.9	0.0	1.4	0.4
XP 07716000	Y	33.8	33.6	32.2	6.3	24.7	1.2	1.3	0.0	0.2	0.0
Jawbridge	Y	36.0	35.6	33.4	1.3	31.0	1.2	1.7	0.1	0.0	0.2
<i>Bejo</i>											
Tamara	Y	6.2	3.3	2.1	0.0	0.0	1.3	1.4	2.1	0.8	0.0
Legend	Y	28.0	25.9	18.2	1.7	13.2	3.4	7.7	0.8	0.0	0.6
Dawson	Y	27.7	27.2	15.6	0.0	11.4	4.2	11.6	0.3	0.0	0.2
Hamilton	Y	32.0	31.4	28.2	0.4	20.8	7.0	3.2	0.1	0.2	0.3
Red Carpet	R	4.1	0.2	0.0	0.0	0.0	0.0	0.2	3.9	0.0	0.0

*significant differences at $p < .05$

**least significant differences (LSD): harvest yield 5.3; market yield 5.5; market yield w/o prepack 5.25; colossal 6.86; jumbo 7.67; medium 3.02; prepack 4.37; culls .79; defects .67



Table 2. Emergence, Pink Root, Fusarium, Maturity - Western Colorado Onion Variety Trials

Hines Farms - Delta, Colorado

Planted April 3; Emergence June 1; Fusarium and Pink Root August 31; Maturity September 14 and 23.

	<u>Color</u>	<u>Emergence Plts/5 row ft*</u>	<u>Pink Root Severity %root infected*</u>	<u>Fusarium %infected plants*</u>	<u>Maturity % tops down 9/14/2020*</u>	<u>Maturity % tops down 9/23/2020*</u>
<u>Grower Standard</u>						
Vaquero	Y	42.5	2.2	1	81.5	89.8
Granero	Y	44.3	2.2	0	75.3	80.8
<u>American Takii</u>						
Traverse	Y	37.5	2	9.8	89.5	95.0
Grand Perfection	Y	34	2.9	4.3	31.3	36.8
Ridgeline	Y	31	2	9.8	50	54.8
<u>Seminis</u>						
SV6672NW	Y	41.3	1.9	1.8	77.3	83.3
Tucannon	Y	38.8	2.7	1.8	73.8	81.0
Crusher	Y	40.5	2.5	4.3	80.8	86.5
XP 07716000	Y	32	2.6	4.3	78	83.8
Jawbridge	Y	45	2.7	0.8	81.8	87.8
<u>Bejo</u>						
Tamara	Y	37.8	3.2	21.5	0	0.0
Legend	Y	41.5	2.8	0	77.8	82.3
Dawson	Y	44.3	2.6	4.3	88.3	94.0
Hamilton	Y	38.8	2.1	0	17.5	20.8
Red Carpet	R	37.3	3.2	14.5	0	0

*significant differences at p < .05

**least significant differences (LSD): Emergence 3.19; Pink Root Severity 0.4.

Table 3. Comparison Table for Fusarium and Maturity.

	<u>Fusarium*</u>	<u>Maturity % tops down 9/14/2020*</u>	<u>Maturity % tops down 9/23/2020*</u>
Vaquero	0.1	1.1	1.3
Granero	0.0	1.1	1.1
Traverse	0.3	1.2	1.3
Grand Perfection	0.2	0.8	0.6
Ridgeline	0.3	0.7	0.8
SV6672NW	0.1	1.2	1.2
Tucannon	0.1	1.0	1.2
Crusher	0.2	1.1	1.2
XP 07716000	0.2	1.1	1.2
Jawbridge	0.0	1.1	1.2
Tamara	0.5	0.0	0.0
Legend	0.0	1.1	1.2
Dawson	0.2	1.2	1.3
Hamilton	0.0	0.4	0.4
Red Carpet	0.4	0.0	0.0

**Least significant differences (LSD): Fusarium 0.12; Maturity (9/14) 0.27; Maturity (9/23) 0.3.